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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,649	12/30/2004	Jan Hoogerbrugge	NL02 0575 US	7853

65913 7590 11/13/2007	EXAMINER
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131	MEONSKE, TONIA L

ART UNIT	PAPER NUMBER
2181	

NOTIFICATION DATE	DELIVERY MODE
11/13/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 August 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   In view of the Appeal Brief filed on August 20, 2007, PROSECUTION IS

HEREBY REOPENED. A new rejection is set forth below.

2.   To avoid abandonment of the application, appellant must exercise one of the

following two options:

        (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply

under 37 CFR 1.113 (if this Office action is final); or,

        (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed

by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and

appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth

in 37 CFR 41.20 have been increased since they were previously paid, then appellant

must pay the difference between the increased fees and the amount previously paid.

3.   A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by

signing below:

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

5.   Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

6.   In claims 1, 6, 7, and 8, the recitation of "a connection bus (4) connecting said

processors (1) and said cache memory units (2)" is used. It is unclear as to whether the

connection is meant to connect the processors to the cache units or the cache units to

cache units, etc.

7.   All other claims are rejected for its dependencies.

8.   Claims 1, 6, 7, and 8 recite the limitation "said connection line (4)". There is

insufficient antecedent basis for this limitation in the claim.

9.   Claim 10 is rejected on the grounds that it is unclear whether the program is

executed on a computer. The recitation that "if said methods are executed by said

computer" is vague and indefinite.

Claim Rejections - 35 USC § 101

10.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

11.   Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. Claim 10 appears to be drawn to a computer

program per se without the inclusion of the program being stored on a medium.

Claim Rejections - 35 USC § 103

12.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

13.   Claims 1-4, 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Engel.

14.   As per **claim 1**, Engel discloses a multi-processor computer system comprising

    a.   at least two processors (1) for parallel execution of processes (See

    abstract: An alternate embodiment details the peripheral device be an unit

    processor in a multiprocessor system.).

15.   Engel has not specifically taught at least two cache memory units, each being

associated with and connected to a separate processor. However, caches were well

known to speed up the retrieval of data so that data does not need to be retrieved in a

slow manner by going to the main memory off chip. Therefore it would have been

obvious to one of ordinary skill in the art at the time the invention was made to have the

computer system of Engel comprise at least two cache memory units, each being

associated with and connected to a separate processor, for the desirable purpose of

speeding up the retrieval of data.

16.   The system of Engel having caches yields the following limitations in the claimed

configuration.

    a.   a connection bus (4) connecting said processors (1) and said cache

memory units (2) (See figure 6: A system power controller microcontroller bus

610 is available for connecting the processors.), and

    b.   a process list unit (3) connected to said connection line (4) for storing a

process list of processes to be available for execution by said processors (1)

(See figure 6: Instructions in memory are able to be passed through bus 610.

Instructions in the memory is the claimed process list.), wherein

    c.   said processors (1) are adapted for loading a global wake-up variable

signaling process additions of processes to said process list into their associated

cache memory unit (2) (See column 7, lines 43-45: A subsystem power controller

is used.),

    d.   for switching into a low-power mode if said process list contains no

process for execution by said processors (1) (See column 14, lines 66-68: A

Power Down signal is given and turns off specified parts of a system.) and

    e.   for switching into a normal-power mode if said wake-up variable signals an

addition of a process to said process list (See column 14, lines 39-42: A Power

Up signal is given and turns on specified parts of the system.).

17.   As per **claim 2**, Engel discloses wherein said processors (1) are adapted to

switch into the normal-power mode if the wake-up variable held in the associated cache

memory units (2) is changed due to an addition of a process to said process list (See figure 17, column 13, line 67- column 14, line 18 and column 14, lines 39-42: An interface select number is given in an instruction to indicate what is to be turned on.).

18.   As per **claim 3**, Engel discloses wherein said processors (1) are adapted to execute a store command on the wake-up variable when adding a process to said process list (See figures 17 & 18 and column 13, line 67- column 14, line 18: The interface select must be inherently stored in at least RAM so that mode will always be known.).

19.   As per **claim 4**, Engel discloses wherein said processors (1) are adapted to send a request to other processors to drop the wake-up variable from their associated cache memory unit when adding a process to said process list (See column 14, lines 43-54).

20.   As per **claim 6**, Engel discloses the limitations for reasoning similar to that of claim 1. A processor in the system can be found in figure 6.

21.   As per **claim 7**, Engel discloses the limitations for reasoning similar to that of claims 1 & 2.

22.   As per **claim 8**, Engel discloses the limitations for reasoning similar to that of claims 1-3.

23.   As per **claim 10**, Engel discloses the limitations for reasoning similar to that of

claims 7. Disclosure of the computer program stored in a computer readable medium

can be found in column 9, lines 36-39.

24.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engel in

view of Culler et al (Parallel Computer Architecture: A Hardware/Software Approach),·

herein known as Culler.

25.   As per **claim 5**, Engel discloses wherein said computer system as claimed in

claim 1.

26.   Engel does not teach the use of a cache coherence protocol.

27.   Culler does teach a computer system which is adapted for implementing an

invalidation based cache coherence protocol (See section 5.1 on pages 273-283).

28.   It would have been obvious to a person having ordinary skill in the art at the time

the invention was made to have modified Engel to include the use of a cache coherence

protocol. Cache coherence protocols are well known in the art and have been used in

systems where memory is shared, which is the case in Engel (See figure 6: The two

processors share a common memory). Some form of a cache coherence protocol must

be used to maintain data integrity and ensure correct results will come from

computations done by the processors in the system.

Response to Arguments

29.   Applicant's arguments with respect to claims 1-8 and 10 have been considered

but are moot in view of the new ground(s) of rejection.

Conclusion

30.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tonia L. Meonske whose telephone number is (571)

272-4170. The examiner can normally be reached on Monday-Friday with first Friday's

off.

31.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

32.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TLM

/Tonia L. Meonske/
Tonia L. Meonske
November 2, 2007

ALFORD KINDRED
SUPERVISORY PATENT EXAMINER